

Rebuild Hawaii Consortium Meeting April 11, 2002

Attendees:

C.H. Guernsey & Co.— Scott Bly; **City & County of Honolulu**—Allyn Lee; **Colliers Monroe Friedlander**—Robert Martin; **County of Hawaii**— Raymond Carr; **County of Kauai**— Glenn Sato; **Department of Accounting and General Services (DAGS)**—Richard Yasunaga; **Department of Business, Economic Development & Tourism (DBEDT)** – Liz Raman, Howard Wiig; Jim Dorian, Andrea Gill; **State Department of Education**—Gene Fong; **State Department of Transportation**—Tad Nakayama, Carl Kawauchi, Wendy Cheuk; **Hawaii County Department of Water Supply**—Clyde Young; **Earth ReNew, Inc.**—Bob Ahsing; **Eco-Lite**— Tom Brennan; **Global Engineering & Construction, LLC.** — Kashmiria Reid; **Hawaii Army National Guard**—Kenneth Stacy; **Hawaii Society for Healthcare Engineering (HSHE)**— Mitch Allen; **Hawaiian Electric Company, Inc. (HECO)** – Norris Creveston, Jim Maskrey, Sam Nichols, Tom Van Liew, Derek Sonoda; **Hawaii Electric Light Company, Inc. (HELCO)** – Pat Moore, Debra Gomez Ota; **Hickam Air Force Base**— John Camara; **Honolulu City Council**—Steve Holmes; **Marine Corps Base Hawaii**—Bill Nutting, Kelly Kedge, Steve Butala; **Marine Forces Pacific Command, Camp Smith**—Beverly Kawasaki; **Maui Community College**—Don Ainsworth; **McElhinney & Associates**—Sheila McElhinney; **Navy PWC Pearl**—Nate Eisenpress; **NORESCO**—Tracy Taoka; **Navy Region Hawaii, Pearl Harbor**—Kevin Saito, Gary Shimabukuro; **Pacific Energy**—Steve Olsen; **Royal Iolani**—Ken Plummer; **Strategic Energy Innovations**— Jennifer Webb; **The Gas Company**—Steve Golden, Charlie Senning; **Trane**—Steffen Nielsen, Bob Hann; **U.S. Department of Energy Pacific Liaison**— Eileen Yoshinaka; **U.S. Department of Housing and Urban Development (HUD)**—Michael Flores.

Welcome and Introductions

Eileen Yoshinaka

Rebuild America it still a program getting funding. The State applied again this year for funding from the State Energy Program (SEP) competitive grant program. Hopefully it will be successful with getting funding for projects.

New Activity Reports by Consortium Members

City & County of Honolulu: Steve Holmes

The City & County of Honolulu is moving ahead with its performance contracting projects. The retrofit of Honolulu Hale is underway and the energy efficient lighting is going in. They are starting to see much brighter offices in City Hall and people say they like it. The expected time schedule for installation of the air-conditioning equipment is Memorial Day Holiday. They are changing out the air-conditioning control system and going over to a digital electrical control system.

Scott Bly reported what is happening with the Kailua Wastewater Treatment Plant. The Draft Kailua Wastewater Treatment Plant Cogeneration Feasibility Study was completed. Performance contracting is one of the recommendations of the study.

County of Hawaii: Ray Carr

Performance contracting work is substantially complete. Still have a large number of small facilities that need lighting retrofits. Will do in house. The electricians have some spare time now because they don't have to maintain large-scale lighting retrofits like they have over the last five years. Ray provides some money for lamps and ballasts using DSM rebates received from Hawaii Electric Light Company (HELCO) for energy efficiency measures already implemented at other facilities. That's a great way to go, about 4 times more cost effective than going out to a contractor.

They have a major program developing with the Department of Water Supply. See the presentation noted later in these minutes.

County of Kauai: Glenn Sato

Completed performance contract lighting retrofits for 29 facilities. Funding from EES-Kauai's budget is being provided to electricians to retrofit lighting in additional smaller areas not done through the performance contract.

The final report for the Kauai Lagoons project is completed and will be turned over to the Kauai Lagoons owners. They will review it to determine whether or not they want to implement recommendations made in the report. Kauai Lagoons electrical costs totaled \$285,482 in 2001. The annual estimated savings after a retrofit is \$102,421; a savings of roughly 36% of the current energy costs. The estimated project cost is \$392,602 with a 3.8 year payback. Incentives from Kauai Electric would total \$165,865, bringing the total adjusted project cost to \$226,737 and bringing payback period down to 2.2 years.

Kauai Electric is for sale and if ownership changes Glenn does not know what is going to happen to the incentive programs that are in place now. Parties have intervened in the Kauai Electric sale docket, including the County, Department of Defense, Life of the Land and the Hawaii Renewable Energy Association. They are waiting for the Public Utility Commission to decide who has intervening status.

Department of Business, Economic Development & Tourism (DBEDT): Elizabeth Raman

The Rebuild Hawaii meeting notices and minutes will be by emailed to members from now on. The new Rebuild Hawaii Marketing Kit is available. A matrix was put together to track the progress of projects presented at the January 2002 Rebuild Hawaii meeting.

2 Publications are now available, the *Case Study of Energy Performance Contract at UH Hilo* and *Guide to Performance Contracting, Measurement & Verification of Energy Savings*. If you want copies contact Elizabeth Raman at eraman@dbedt.hawaii.gov or call 587-3806.

National Guard: Elizabeth Raman

They issued a RFP for performance contracting services in March 2002. On April 10, 2002 there was a pre-proposal meeting and 5 interested companies attended. They toured the buildings that will need energy surveys.

Judiciary: Elizabeth Raman

They issued an RFP for their performance contract and have received 3 proposals.

Housing and Community Development Corporation of Hawaii (HCDCH): Elizabeth Raman reported for Eric Sakanashi

Working on solar water heating design guidelines for systems for multi-family housing projects. The guidelines will include specific recommendations.

HCDCH is applying again for U.S. Department of Housing and Urban Development (HUD) under the Hope VI project. They are asking for \$35 million dollars to replace distressed housing at Kuhio Park Terrace. This proposal will include 10 single-family homes, 185 public housing units, 122 family units and town homes, and 100 senior units. The project also includes an on site community resource center. HCDCH wants to leverage \$100 million on this project.

Update on the Model Energy Code: Howard Wiig

Howard covered revisions to the model energy code. The commercial code was revised in 11 different areas. The most important was to update the EER ratings from all the HVAC equipment from ASHRAE 90.1 1989 to 90.1 1999. This resulted in a 16-17% efficiency increase. Howard has not heard anything about that so apparently implementation with the building division in the city is going very smoothly. The second was to mandate R-19 insulation or equivalent in the roofs of new residences. This has not gone so smoothly and has resulted in a lot of questions. DBEDT's consultant, Eley Associates, the City Building Division, and Howard are working to resolve some of the questions.

They have been working to bring The Big Three developers over to the "green" building side. Two of them are now building beyond code. The developers' customers are happy and giving rave reviews because their homes are cool. Howard found out from one of the builders that are building beyond code that changes made to bring temperature down adds less than \$300 dollars to the total cost of a home. Howard has gone out with a heat gun and taken temperature readings in the attics. He found that the reduction in heat after implementation is about 40 degrees. The average temperature reading is 90 degrees; this is down from 130 degrees. As of now it looks like all the new homes going up on the Ewa plain are in compliance. The revision has taken a lot of effort but has resulted in a better home.

Department of Education: Gene Fong

They are currently in the first phase of renovating classrooms; including changing the lights to new T8s. Funding for the renovations is coming from the repair and maintenance budget. The renovations will take place in 40 schools and on all islands.

The contract is being advertised for retrofits at Maui and Baldwin schools on Maui. The Department of Education plans to gather data on energy savings after this first phase of retrofits are completed.

The Gas Company: Steve Golden and Charlie Senning

Steve addressed an earlier question from Glenn Sato on whether or not the Kauai Electric rebate program will continue when it is sold. Steve answered that it as of now it will continue. The rebate program is under the Public Utility Commission (PUC) and the way Kauai Electric understands it, the Co-op will continue to be regulated by the PUC. The Gas Company is also for sale but they are not as far along as Kauai Electric.

They are planning to hold training workshops on distributed generation on the neighbor islands. Right now they are coordinating with the counties on what the best workshop dates are. At this time it looks like the best dates will be in the fall. These workshops will be geared to be more hands on and less on policy. They will try to bring over speakers from the mainland.

A big project was the renovation of a major distribution center on Kamakee Street in Kakaako. The electric chiller was replaced with a gas-fired absorption chiller. It is the only one in the State and they have had a very good experience with it. It is quieter than the circulators that pump the chilled water to the building. The efficiency of the absorption chiller is 1.0 COP and has an operating cost that is 10% less than a comparable electric chiller.

They are starting to support several developments with combined heat and power, gas cooling, and hybrid cooling systems.

Hawaiian Electric Company (HECO): Sam Nichols, Norris Creveston, Tom Van Liew
The Energy Smart Schools 2002 is waiting for final execution. The program will work with two high schools and start in the fall. One challenge with this round of the program is to show the syllabus will meet Hawaii school based standards.

Energy Solutions for Small Business has worked with condo associations this past quarter to retrofit their common areas to T8 lamps with electronic ballasts. The program will be presented at two upcoming events:

1. Energy Conservation Hawaii's booth at the Small Business Association Awards Luncheon; and
2. Oral presentation at HECO's Customer Appreciation Meeting slated for mid-May at the Hawaii Convention Center.

HECO was approached by the Guam Energy Office through Eileen Yoshinaka to do some lighting training in Guam. HECO is working with the National Labs to help Guam start some lighting programs. Derek Sonota will visit Guam and take compact fluorescent lights and lamps to test at some of the hotels. He will provide the hotels with information on how to connect with manufacturers and marketing representatives. This has been a successful approach in the past.

Hawaii Electric Light Company (HELCO): Pat Moore

HELCO is partnering with NOAA and DBEDT to conduct a feasibility study on installing a 50 kW PV system at the Mauna Loa Observatory. This installation will hopefully be cost effective for the utility as well as NOAA and will provide a great high altitude installation showcase. DBEDT is helping to support the study through a U.S. DOE State Energy Program grant.

Installed a 5.4 kW DC PV system that exemplifies a net energy metered system on HELCO's Kailua-Kona engineering office. This will also feature an educational display. The system will hopefully encourage other businesses to consider installing PV systems as well.

Through a Million Solar Roofs (MSR) grant HELCO got previously they will be sending a market survey to 500 Big Island businesses. The survey will help to identify non-price factors that influence decisions by businesses on whether or not to invest in renewable energy sources (esp. PV or solar water heating). A preferred marketing approach will be developed based on the survey responses.

HELCO has applied for another round of MSR grants and hopefully will be offering a 3-day workshop on installing code compliant PV systems. Bill Brooks of Endecon Engineering, a noted expert in the field, will be the instructor.

HELCO would also like the new grant to address an issue identified by a local solar retailer. They found that when solar contractors or installers approach businesses and can show that installing solar systems is economically viable for the businesses that they still get turned down. Businesses often rely on their tax advisors or business consultants to help them make such decisions and because this group is not familiar with the technology or the economics behind it, they advise businesses not to install solar. HELCO will try to get Keith Rutledge a financial expert in renewable energy to come out and do a study, produce a guidebook, and put on workshops to help tax consultants and others to advise businesses on whether or not they should invest in renewable energy.

Howard Wiig reported on the **Berkeley Lamp** project.

HECO and DBEDT have purchased a number of the Berkeley lamps and sensors. Mike Siminovitch will be providing training on their use. The lamps will be distributed to the government sector and HECO. HECO will distribute some lamps to the hotel industry. The lamp was originally developed for hotel rooms but it turned out to be excellent for offices due to its adjustable light settings. You can set the lamp to provide up light, down light, or both. The lamp is combined with motion sensors so when someone enters or leaves the office the light turns on or off. Small office spaces are getting up to 60% savings.

Tom Brennan will also be selling the lamps. To find more information on the Berkeley Lamp visit <http://lighting.lbl.gov/projects/table/table.html>

Maui Community College (MCC): Don Ainsworth

Continuation of solar water heating testing project they put together on campus. Starting the 3rd year of 3 identical systems. The test lab coordinator will present a paper on final results at an international conference this summer in Reno, NV. Solar Energy in Hawaii. Starting January working on feasibility of adding a ice storage system on campus distributed chilled water system to be serving seven largest buildings on campus. MCC is still working on decreasing demand during hottest part of the day.

University of Hawaii School of Architecture: Jennifer Webb reported for Steve Meder

The School of Architecture is currently working on finalizing the contractual arrangements for the monitoring portable classrooms project. They plan to monitor portable classrooms at Waianae High School. Measurements will be taken on temperature, airflow, and illumination levels. They are looking for equipment that will allow them to install instruments and review real time readings via a modem.

U.S. Department of Housing and Urban Development (HUD): Mike Flores

HUD is working to improve housing opportunities for Hawaiian Homelands. Congress appropriated \$10 million for the native Hawaiian housing block grant program and authorized a \$2 million loan guarantee program. HUD expects to see a lot more housing activity as soon as the interim regulations are issued in the next few months. This could help bring about more Rebuild Hawaii activities. The federal administration continues to emphasize home ownership so there will be a lot of emphasis on this for low-income families, which makes it important that we reduce energy costs in low-income homes. The State right now is working on finalizing administrative rules to allow HUD to use section 8 (a rental assistance program) for low-income families to use for mortgage payments. Measures being cited in Congress now will allow for down payment assistance as well as various tax credits to spur development and opportunities for low-income families for home ownership.

Although HCDCH did not win an award of HOPE VI funding for FY 2001, HCDCH intends to apply again for Kuhio Park Terrace in this year's funding. The HOPE VI Notice of Funding Availability is not part of the current HUD Super Notice of Funding Availability but will be issued as a separate Notice.

Hawaii Society for Healthcare Engineering (HSHE): Mitch Allen

Most of the hospitals have done lighting retrofits and now are looking at other measures but need to find money to do this. This year they plan to focus on maintaining what they have. HSHE is putting on workshops for the technicians and mechanics that maintain the healthcare facilities and to help keep energy use down. They have already put on one workshop and are planning three more.

Air Force: John Camara

Negotiated with the Energy Performance Savings Contract (ESPC) contract for a \$3 million task order to do energy management controls systems, lighting retrofits, solar attic fans and water conservation measures.

Army: Eileen Yoshinaka reported for Keith Yamanaka

Helemanu Housing Solar Water Heating Project is installing solar systems in 610 homes and is scheduled to be completed April 2002. The anticipated energy savings is \$180,000. This project was accomplished via the UESC with HECO through the Navy Basic Order Agreement.

Waianae Army Recreation Cabin Solar Water Heating Project where they are installing solar systems in 39 cabins. This will also be done with HECO through the Navy Basic Order Agreement. The anticipated annual savings are \$12,000.

Other solar water heating projects are planned for Wheeler Fire Station and Schofield Barracks Swimming Pool and Shower House. Fort Shafter Building 502 will install Microcogen by May 2002.

U.S. Army Garrison Hawaii is one of seven candidates for the 2002 Secretary of Army Energy Award.

Marine Corp: Steve Butala

They are working on two demonstration wave energy projects. MCBH provides a good location for wave energy. The biggest problem is environmental concerns; whether it will cause problems with a nearby surfing site, add to beach erosion, or interfere with cultural sites. The first type of system is a floating buoy. The buoy is anchored to the ocean floor and moves up and down, compressing fluid, and generating 20 kW in electricity. The project is funded by a federal grant. Sponsored by the Office of Naval Research, developed by Ocean Power Technologies, managed by NFESC with coordination and engineering support from PACDIV partnering with HECO. The second type of system is a wave focusing system. Concrete parabolic wall would focus the wave into an air column, which would turn a turbine. Funded and installed by Energetech, partnering with Hawaii Natural Energy Institute. The University of Hawaii is helping us with this system.

A Fuel cell demonstration project will install one 5 kW fuel cell in a house on base. Funded by DOD and sponsored by the U.S. Army of Engineer Research and Development Center and managed by Corps of Engineers Construction Engineering Research Laboratory (CERL) of Engineers.

A solar water heating initiative will install systems in 184 housing units in construction. They will have approximately 2000 more housing units over the next 8 years. Find the base housing electricity use is high—probably because the occupants in the homes don't pay for it. They would like to reduce their base load by 15% by putting in solar.

Looking for \$3 million in funding for a project to upgrade their Water Reclamation Facility from R-2 to R-1 quality. Currently water the golf course with reclaimed water. R-1 will let us expand our coverage to ball-fields, parade grounds, common areas, etc.

Other projects:

- They plan to use energy-efficient measures in new construction, including, energy-efficient lighting, high-efficiency air-conditioning, local fixtures, stingray lighting.
- They have an ESPC contract with NORESO, major lighting retrofits, daylighting, PVC, and LED stop lights.
- Plan to replace inefficient streetlights.
- A new post office is planned and will be built with solar water heating and daylighting. Found that A&E firms here were not up to speed on these things.

Navy: Kevin Saito

Energy use went way up since September 11, 2001 due to increased security and operating hours. One issue they had was with portable security guard gates that were moved around randomly. Photovoltaic panels coupled with high efficiency lighting increased the security of the area around the portable gates. They got seed money from HECO to help them fund this PV project. They are currently moving ahead with the project, which will result in enhanced security for Navy Region Hawaii's assets.

Navy Region is moving ahead with the ESPC to increase their energy efficiency in the near future.

Pearl Harbor Shipyard: Gary Shimabukuro

The DSM/BOA project of Pearl Harbor Naval Shipyard is going very well. They will be in the O&M phase shortly and the training should commence in the month of May. The training will have four engineers from the Facilities and Maintenance Division and the Public Work Center (PWC), Pearl Harbor, participating in this training to learn about Direct Digital Controls (DDC) and maintenance of the Chiller Plant. The Chiller Plant has a capacity of 1800 tons of chill water feeding eight buildings in the shipyard. Hawaiian Electric Company (HECO), being the General Contractor for this project, has also retrofitted 17,300 fluorescent lamps (T12) and 6,400 magnetic ballast with T8 fluorescent lamps and electronic ballast. The energy savings, based on the first quarter of the fiscal year 2002, showed significant savings. They are well ahead of our energy goals set for 2005 and if they continue to save energy from this project in the coming years the way are doing now, they will be ahead of their energy goals for the year 2010. However, this DSM/BOA project is only 40% complete. They still have another 60% to go in their energy conservation projects for the rest of the shipyard.

PACDIV is the project manager for Pearl Harbor Energy Conservation Projects. Gary will coordinate with them to make a presentation of this project at a Rebuild Hawaii meeting in the near future. Hawaiian Electric may also want to participate in this presentation.

HECO has some dedicated engineers on this project and they have made this project run very well and Gary would like to acknowledge them; Linda Koyanagi, Alvin Kurisu, Sam Gillie, Mark Yamamoto, and Paul Featherland. They came in on holidays and

stayed after hours to run the chiller plant and troubleshoot problems to make the plant run smoothly. They are now making a workstation to control (DDC) the Chiller Plant and the two cooling loops that connect the eight buildings in the shipyard at this centrally located control point. They have also installed digital wattmeters at nine substations that service eight buildings to check the energy consumption that are all monitored at the workstation.

Center for Asian-Pacific Infrastructure Development (CAPHID)

Dr. Jim Dorian, DBEDT

See attached copies of transparencies.

Energy Program at the Hawaii County Department of Water Supply

Dr. Ray Carr and Clyde Young.

See attached PowerPoint presentation.

Derek Sonoda presented a sneak preview of a free new compact disk called ***The Power CD*** from HECO. It contains resources from HECO's Energy Solutions Programs. It includes the Power Book, rebate applications, and worksheets, along with a PowerPoint presentation. Contact Derek Sonoda at 543-4763.

Update on New Projects

Jennifer Webb spoke about **Green Schools**. Green Schools looks for no-cost behavior and operation changes in schools to reduce energy use. Other schools nationally who have implemented the Green Schools program have seen an average of 7-15% reduction in energy costs.

Jim Maskrey reported on a **Professional Sustainable Design Tools Workshop Series**. This project was submitted for this year's State Energy Program (SEP) competitive grant program. The series will provide professional level workshops for architects and engineers to familiarize them with the concepts associated with sustainable design. The workshops will cover a range of issues in sustainable design, such as, energy, water, and indoor air quality.

Lighting

Tom Brennan reported that a number of buildings are putting in the new LEC Exit Signs.

- 1132 Bishop Building
- Alii Place
- Ward Kinau
- Hale Koa
- Pearl Regency
- East West Center

Tom also spoke about Atlite Stairlite stairwell lighting system. The City & County of Honolulu Department of Planning and Permitting accepts this energy efficient system but you must meet specific provisions for retrofit. For more information call Tom Brennan at 923-4271.

Jim Thomas presented on products from Stingray Lighting. For more information visit www.stingraylighting.com.

Funding Opportunities

Need help finding funding for your project? Contact Jennifer Webb at jenwebb@hawaii.rr.com or phone 739-2217. She is available to help you.

Upcoming Workshops and Events

- 2002 Energy Workshop and Exposition will be held in Palm Springs, CA June 2-5 2002. For more information contact 1-800-395-8574 or go to www.energy2002.ee.doe.gov.
- Rebuild America National Forum will be held July 29-August 1, 2002 in New Orleans, LA. For more information go to www.2002conference.com.
- Hawaiian Electric Company's Energy Expo will be held October 22-23, 2002 at the Sheraton Waikiki. More details on this will be announced soon.

Jennifer Webb prepared these minutes.